

ABSTRACT

An apparatus including a contact on a substrate, a dielectric material overlying the contact, a phase change element overlying the dielectric material on a substrate, and a heater element disposed in the dielectric material and coupled
5 to the contact and the phase change element, wherein a portion of the dielectric material comprises a thermal conductivity less than silicon dioxide. A method including introducing over a contact formed on a substrate, a dielectric material, a portion of which comprises a thermal conductivity less than silicon dioxide,
10 introducing a heater element through the dielectric material to the contact, and introducing a phase change material over the dielectric material and the heater element.